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| EXAMINER | |
|---|---|
| HALIYUR, VENKATESH N | |
| ART UNIT | PAPER NUMBER |
| 2476 | |

| NOTIFICATION DATE | DELIVERY MODE |
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| 12/21/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/084,019 | TIEDEMANN ET AL. | |
| | Examiner | Art Unit | |
| | VENKATESH HALIYUR | 2476 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10/30/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-30 (claims 1-7,14,19 & 25-27 canceled)* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13,18* is/are allowed.

6)☒ Claim(s) *8-9,11-12,15-17,20,21,23,28 and 29* is/are rejected.

7)☒ Claim(s) *10,22,24,30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed on 10/03/2009 has been considered. However the amendments necessitated new ground(s) of rejection. Rejection follows.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/30/2009 has been entered.

3. Claims 1-30 are pending in the application. Claims 1-7, 14, 19, and 25-27 are canceled.

### *Claim Objections*

4. Claims 13, 18, objected to because of the following informalities: In these claims the phrase(s) in the limitation “a memory storage unit adapted to store a plurality of computer-readable instructions;” must be changed to recite as "a memory storage unit

storing a plurality of computer-readable instructions;" or the likes in order to present the claims in a better form. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being anticipated by DeMartin et al [US Pat: 6,421,527] and Ling [US Pat: 5,216,692] further in view of Kamel et al [US Pat: 6,285,886].

Regarding claim 12, DeMartin et al in the invention of "System for Dynamic Adaptation of Data/Channel Coding in Wireless Communications" disclosed in a wireless communication system **(Figs 1-3, col 1, lines 45-50)** for processing voice communications and packet-switched communications, a base station **(BS of Fig 3, col 2, lines 8-28)** comprising: receive circuitry **(Figs 2-3)** operative to receive signals on a reverse link **(up link, col 3, lines 19-47, Figs 3)**, including a quality message with a parity check at a first rate **(differential coding for channel measurement with 1 bit parity check for different channel grade, col 6, lines 1-43, Fig 1)**, and differential indicators at a second rate **(channel grade indicators),** the quality message

periodically providing a quality metric of a forward link **(down link C/I measurements, col 3, lines 66-67,col 4, lines 1-8)**, wherein the differential indicators track the quality metric between successive quality messages **(moving average of the quality indicator C/I of the channel, col 4, lines 48-55)**; a memory storage unit operative to store a quality message received on the reverse link **(item 63 of Fig 4, col 4, lines 56-65);** and a differential analyzer **(item 39 of Fig 2, channel analysis with delta modulation)** to update the quality message stored in the memory storage unit in response to the differential indicators and the parity check **(col 5, lines 64-67,col 6, lines 1-44).** DeMartin et al disclosed receive circuitry **(Fig 3)** operative to receive signals on a reverse link **(up-link)**, including a quality message with a parity check **(measurement bit)** with channel grade quality indicators, but fails to positively disclose that the quality message periodically providing a quality metric of a forward link, wherein the differential indicators track the quality metric between successive quality messages. However, Ling in the invention of "A method and apparatus for adjusting a power control threshold in a communication system" disclosed a method for receiving the quality message periodically providing a quality metric of a forward link, wherein the differential indicators **(indicator is set based on difference signal)** track the quality metric between successive quality messages received at the receiver **(Receiver circuitry, item 100 of Fig 1, col 5, lines 35-67, col 6, lines 1-21, col 7, lines 26-56, Figs 1-2).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of receiving quality message periodically providing a quality metric of a forward link, wherein the indicator is set based on

difference signal to track the quality metric between successive quality messages received as taught by Ling in the system of DeMartin et al to receive the quality message periodically providing a quality metric of a forward link, wherein the differential indicators track the quality metric between successive quality messages. However, both DeMartin and Ling fails to disclose determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators, However, Kamel et al disclosed a method wherein a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators **(col 5, lines 20-51, col 9, lines 55-67, col 10, lines 1-30, Figs 1-4).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method wherein a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators of as taught by Kamel in the system of DeMartin as modified by Ling to include the method wherein a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators.
One is motivated as such in order to provide a method wherein a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators to accurately adjust signal power levels of the transmitting channels to minimize noise in wireless communication systems.

7. Claims 8-9,11, 15-17, 20-21, 23, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chennakeshu et al [US Pat: 5,905,742] and Kamel et al [US Pat: 6,285,886] further in view of Ling [US Pat: 5,216,692].

Regarding claims 8,11,28, Chennakeshu et al in the invention of "Method and Apparatus for Channel Symbol Decoding" disclosed in a wireless communication system **(Figs 2-4)** , a method comprising: estimating a channel condition over a first time window **(channel quality measured over a holding window, col 9, lines 18-29, Fig 4)**; comparing the estimated channel condition to a first threshold value **(col 9, lines 30-39)**; Chennakeshu et al disclosed transmitting differential indicators **(channel quality indicator, col 5, lines 1-15)** based on the comparison **(col 8, lines 14-67,1-17)** and transmitting differential indicators with quality messages **(col 6, lines 30-36, col 12, lines 19-37, col 12, lines, 46-54, Figs 2A/B)** but fails to disclose determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators, However, Kamel et al disclosed a method for determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators **(col 5, lines 20-51, col 9, lines 55-67, col 10, lines 1-30, Figs 1-4).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators as taught by Kamel et al in the system of Chennakeshu et al to determine a transmission rate for transmission of quality messages. Kamel et al disclosed transmitting incremental change of the first and

second quality measurement independently **(col 5, lines 45-51)**, but both Chennakeshu and Kamel fails to positively disclose wherein transmitting differential indicators based on the comparison and transmitting differential indicators independently of quality messages. However, Ling disclosed a method for transmitting the differential indicators **(indicator is set based on difference signal, Figs 1-2)** with quality messages **(power control indicator is transmitted every 1.25ms, col 5, lines 35-67, col 6,lines 1-21).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of transmitting the differential indicators independent of quality messages as taught by Ling in the system of Chennakeshu et al as modified by Kamel to include the method of transmitting differential indicators based on the comparison and transmitting differential indicators independently of quality messages. One is motivated as such in order to improve data transmission quality by estimating channel condition based on a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators to accurately adjust signal power of the measured channels to minimize noise in wireless communication systems.

Regarding claim 9, Chennakeshu et al disclosed wherein the first time window is dynamically adjusted based on operation of the system **(col 9, lines 61-67, col 10, lines 1-9).**

Regarding claim 15, Chennakeshu et al disclosed a wireless apparatus **(Fig 2/6)**, comprising: processing unit (**item 39 of Fig 2, item 52 of Fig 6)**, operative for executing computer-readable instructions (logic); and a memory storage unit **(item 50 of Fig 6)**

adapted to store a plurality of computer-readable instructions for: estimating a channel condition over a first time window **(channel quality measured over a holding window, col 9, lines 18-29, Fig 4)**; comparing the estimated channel condition to a first threshold value **(col 9, lines 30-39)**; Chennakeshu et al disclosed transmitting differential indicators based on the comparison **(col 8, lines 14-67,1-17)** and transmitting differential indicators with quality messages **(col 6, lines 30-36, col 12, lines 19-37, lines, col 12, lines, 46-54, Figs 2A/B)** but fails to disclose determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators, However, Kamel et al disclosed a method for determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators **(col 5, lines 20-51, col 9, lines 55-67, col 10, lines 1-30, Figs 1-4).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators as taught by Kamel et al in the system of Chennakeshu et al to determine a transmission rate for transmission of quality messages. Kamel et al disclosed transmitting incremental change of the first and second quality measurement independently **(col 5, lines 45-51)**, but both Chennakeshu and Kamel fails to positively disclose wherein transmitting differential indicators based on the comparison and transmitting differential indicators independently of quality messages. However, Ling disclosed a method for transmitting the differential indicators **(indicator is set based on difference signal, Figs 1-2)** with quality messages **(power**

**control indicator is transmitted every 1.25ms, col 5, lines 35-67, col 6,lines 1-21).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of transmitting the differential indicators independent of quality messages as taught by Ling in the system of Chennakeshu et al as modified by Kamel to include the method of transmitting differential indicators based on the comparison and transmitting differential indicators independently of quality messages. One is motivated as such in order to improve data transmission quality by estimating channel condition based on a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators to accurately adjust signal power of the measured channels to minimize noise in wireless communication systems.

Regarding claim 16, Chennakeshu et al disclosed that the wireless communication system supporting a plurality of carriers **(plurality of Figs 2-4, col 11, lines 14-31)**, a method comprising: determining an average channel condition among the plurality of carriers **(channel quality measured over a holding window, col 8, lines 36-67, Fig 4)**; comparing the average channel condition to a first threshold value **(col 9, lines 1-29)**; Chennakeshu et al disclosed transmitting differential indicators based on the comparison **(col 8, lines 14-67,1-17)** and transmitting differential indicators with quality messages **(col 6, lines 30-36, col 12, lines, 46-54, Figs 2A/B)** but fails to disclose determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators, However, Kamel et al disclosed a method for determining a first transmission rate for

transmission of quality messages and a second transmission rate for transmitting differential indicators **(col 5, lines 20-51, col 9, lines 55-67, col 10, lines 1-30, Figs 1-4).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of determining a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators as taught by Kamel et al in the system of Chennakeshu et al to determine a transmission rate for transmission of quality messages. Kamel et al disclosed transmitting incremental change of the first and second quality measurement independently **(col 5, lines 45-51)**, but both Chennakeshu and Kamel fails to positively disclose wherein transmitting differential indicators based on the comparison and transmitting differential indicators independently of quality messages. However, Ling disclosed a method for transmitting the differential indicators **(indicator is set based on difference signal, Figs 1-2)** with quality messages **(power control indicator is transmitted every 1.25ms, col 5, lines 35-67, col 6,lines 1-21).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of transmitting the differential indicators independent of quality messages as taught by Ling in the system of Chennakeshu et al as modified by Kamel to include the method of transmitting differential indicators based on the comparison and transmitting differential indicators independently of quality messages. One is motivated as such in order to improve data transmission quality by estimating channel condition based on a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators to accurately adjust

signal power of the measured channels to minimize noise in wireless communication systems.

Regarding claim 17, Chennakeshu et al disclosed assigning a weight to each of the plurality of carriers, wherein the average channel condition is a weighted average **(col 11, lines 32-56)**.

Regarding claims 20, Chennakeshu et al disclosed a wireless apparatus **(Figs 2/6),** comprising: a quality measurement unit configured to estimate a channel condition **(highest quality indicator)** over a first time window **(col 5, lines 1-15)**; a differential analyzer **(item 48 of Fig 2, signal tracker)** configured to compare the estimated channel condition to a first threshold value **(stages, col 9, lines 18-61, Fig 4)**; Chennakeshu et al disclosed controller **(Figs 2A/B)** configured to transmit differential indicators based on the comparison **(col 8, lines 14-67,1-17)** and transmitting differential indicators with quality messages **(col 6, lines 30-36, col 12, lines 19-37, col 12, lines, 46-54, Figs 2A/B)** but fails to disclose that the that the controller is configured to determine a first transmission rate for transmission of quality messages and a second transmission rate for transmission of the differential indicators based on the comparison, the differential analyzer further configured to generate quality messages at the first transmission rate, the differential analyzer further configured to transmit differential indicators at the second transmission rate independently of quality messages, However, Kamel et al disclose that the that the controller **(Fig 1)** configured to determine a first transmission rate for transmission of quality messages and a second transmission rate for transmission of the differential indicators based on the comparison, the differential

analyzer **(col 2, lines 15-65, col 7, lines 31-60, Fig 3)** further configured to generate quality messages at the first transmission rate, the differential analyzer further configured to transmit differential indicators at the second transmission rate **(col 5, lines 20-51, col 9, lines 55-67, col 10, lines 1-30, Figs 1-4).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of controller is configured to determine a first transmission rate for transmission of quality messages and a second transmission rate for transmission of the differential indicators based on the comparison, the differential analyzer further configured to generate quality messages at the first transmission rate, the differential analyzer further configured to transmit differential indicators at the second transmission rate as taught by Kamel in the system of Chennakeshu et al to determine a first transmission rate for transmission of quality messages and a second transmission rate for transmission of the differential indicators. Kamel et al disclosed transmitting incremental change of the first and second quality measurement independently **(col 5, lines 45-51)**, but both Chennakeshu and Kamel fails to positively disclose wherein transmitting differential indicators based on the comparison and transmitting differential indicators independently of quality messages. However, Ling disclosed a method for transmitting the differential indicators **(indicator is set based on difference signal, Figs 1-2)** with quality messages **(power control indicator is transmitted every 1.25ms, col 5, lines 35-67, col 6,lines 1-21).** Therefore it would have been obvious for one of the ordinary skill in the art at the time the invention was made to use the method of transmitting the differential indicators independent of quality messages as taught by

Ling in the system of Chennakeshu et al as modified by Kamel to include the method of transmitting differential indicators based on the comparison and transmitting differential indicators independently of quality messages. One is motivated as such in order to improve data transmission quality by estimating channel condition based on a first transmission rate for transmission of quality messages and a second transmission rate for transmitting differential indicators to accurately adjust signal power of the measured channels to minimize noise in wireless communication systems.

Regarding claims 21, 23, 29 Chennakeshu et al means for dynamically adjusting the first window based on operation of the system **(col 9, lines 18-27)**.

## *Allowable Subject Matter*

8. Claims 10, 22, 24, 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 13, 18 are allowed over prior art if claim objection made in this office action is overcome.

## *Response to Arguments*

9. Applicant's argument, see remarks, filed on 10/03/2009, with respect to rejection of claims 1-30 have been fully considered but are moot in view of the new grounds of rejections.

## *Conclusion*

10. Any inquiry concerning this communication or earlier communications should be directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached @ (571)-272-3795. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

/Venkatesh Haliyur/

Examiner, Art Unit 2476

/Ayaz R. Sheikh/

Supervisory Patent Examiner, Art Unit 2476